

a conductive layer wiring which is formed in said first region on the substrate so as to have a spiral shape and which serves as an induction element; and

a protective film which is formed in said first region between the substrate and said conductive layer and prevents silicidation of said protruding portion in said first region during silicidation of the active element in said second region.

REMARKS

Favorable reconsideration of this application, in light of the present amendment and following discussion, is respectfully requested.

Claims 1-14 and 21-23 are active; Claims 15-20 have been withdrawn from consideration; Claims 1, 5, 7, 10 and 12 have been amended; and Claims 21-23 have been newly added. It is respectfully submitted that no new matter has been added by this amendment.

In the outstanding Office Action, Claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as anticipated by the Background of the Invention section of the Applicant's specification (hereafter "the Background"); Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Wen et al. (U.S. Pat. No. 5,918,121, hereafter Wen); Claims 5-7 and 10-12 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Song (U.S. Pat. No. 6,075,257); and Claims 8, 9, 13, and 14 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Song and further in view of Wen.

Regarding the rejection of Claims 1 and 2 under 35 U.S.C. § 102(b) as anticipated by the Background, this rejection is respectfully traversed.

Claim 1 has been amended herewith to clarify the subject matter recited therein. Specifically, Claim 1 has been amended to define the protruding portion as formed only in a

region other than a region directly below the conductive layer wiring. Support for this amendment may be found, for example, in the non-limiting embodiments of Figures 1, 3, 5, and 7.

By contrast, as depicted, for example, in Background Figures 19 and 20, the semiconductor device described in the Background includes protruding portions formed in a region directly below the conductive layer wiring 5. In the semiconductor device according to that described in the Background, problems such as dishing during CMP processing may occur. According to the semiconductor device recited in Claim 1, because the protruding portion is formed in a region other than a region directly below the conductive layer wiring, dishing during a CMP process is prevented, while Q-value characteristics of the inductor are maintained.

Consequently, as the semiconductor device of the Background suffers from the very defects the Applicant sought to overcome, it is respectfully submitted that Claim 1 patentably distinguishes over the Background. Additionally, it is respectfully submitted that dependent Claim 2 patentably distinguishes over the Background for at least the reasons above-noted with respect to Claim 1.

Regarding the rejection of Claims 3 and 4 under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Wen, this rejection is respectfully traversed. Claims 3 and 4 depend from Claim 1, which includes the feature of a protruding portion formed only in a region other than a region directly below the conductive layer wiring.

As noted above, the Background fails to disclose or suggest this feature. It is respectfully submitted that Wen fails to remedy this defect of the Background.

Wen relates to a method of reducing substrate losses in an inductor. There is no disclosure or suggestion in Wen that a protruding portion is formed only in a region other than a region directly below the conductive layer wiring, or that such a structure would be

beneficial. Further, there is no recognition in Wen at all that the dishing problem may occur during CMP processing.

Consequently, as neither the Background nor Wen discloses or suggests a protruding portion formed only in a region other than a region directly below the conductive layer wiring, it is respectfully submitted that pending Claim 1 patentably distinguishes over either the Background or Wen, either alone or in combination. It is likewise respectfully submitted that pending dependent Claims 3 and 4 patentably distinguish over the Background and Wen for the reasons above-noted with respect to Claim 1, from which these claims depend. It is therefore respectfully requested that this rejection be withdrawn.

As for the rejection of Claims 5-7 and 10-12 under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Song, this rejection is also traversed.

Claim 5, as amended, defines the protective film as formed in an inductor region and formed between the substrate and the conductive layer. Support for this amendment may be found, for example, in the non-limiting drawings of Figures 9, 10, and 13-18. Additional support may be found in the specification on page 8, lines 16-19 and lines 22-26.

With the protective film as defined in Claim 5, silicidation in the region for an active element is achieved while silicidation in the inductor region is prevented. Therefore, the resistance of the protruding portion may be maintained, thereby achieving a high frequency wave effect.

The Background neither discloses nor suggests a protective film formed in an inductor region between a substrate and a conductive layer that prevents silicidation in the inductor region. It is respectfully submitted that Song fails to remedy this defect of the Background.

Song relates to a method for forming a silicide-preventing layer when manufacturing an LCD. Specifically, the silicide-preventing layers 71 and 72 of Song are formed between a doped amorphous silicon region 61, 62 and a source and drain electrode 81, 82, respectively,

to prevent silicidation in the doped amorphous silicon region 61, 62.² However, Song neither discloses nor suggests a protective film that prevents silicidation of the protruding portion in an inductor region.

Moreover, Song describes that the silicide-preventing layers 71 and 72 are preferably less than 20 Å.³ This thickness is thin enough to reduce and preferably minimize the contact resistance.

By contrast, a protective film, as defined in Claim 5, enables the prevention of the resistance of the dummy element from decreasing, thereby achieving high-frequency wave effects. Specifically, as the coupling of the spiral wiring portions and the substrate decreases, the leakage of high-frequency waves into the substrate may be reduced and the Q-value of the inductor may be maintained to be a large value.⁴ Thus, the function of the silicide-preventing layer 71 and 72 as described in Song is inconsistent with that of the protective film recited in Claim 5.

Consequently, as neither the Background nor Song discloses or suggests the features recited in Claim 5, it is respectfully submitted that Claims 5-7 and 10-12 patentably distinguish over the Background and Song, either alone or in combination.

Regarding the rejection of Claims 8, 9, 13, and 14 under 35 U.S.C. § 103(a) as unpatentable over the Background in view of Song and further in view of Wen, this rejection is traversed.

Claims 8, 9, 13, and 14 depend from Claim 5. As noted above, neither the Background nor Song, either alone or in combination, discloses or suggests the features recited in Claim 5. It is respectfully submitted that Wen fails to remedy the defects above-noted with respect to the Background and Song.

² Song, col. 4, lines 18-29.

³ Id., at lines 27-28.

⁴ Specification, page 8, lines 25-28.

As noted above, Wen relates to a method for reducing substrate losses in an inductor. However, Wen does not disclose or suggest a protective film formed in an inductor region between a substrate and a conductive layer that prevents silicidation in the inductor region. In light of this deficiency, it is respectfully submitted that Wen fails to remedy the defects above-noted with regard to the Background and Song.

Consequently, as none of the Background, Song, or Wen discloses or suggests the protective film formed in an inductor region between a substrate and a conductive layer that prevents silicidation in the inductor region, as recited in Claim 5, it is respectfully submitted that dependent Claims 8, 9, 13 and 14 patentably distinguish over the Background, Song, and Wen, either alone or as applied in combination. It is therefore respectfully requested that this rejection be withdrawn.

Newly added Claims 21-23 recite additional features believed to patentably distinguish over the references of record. Support for newly added Claims 21-23 may be found, for example, in the non-limiting illustrations of Figures 1, 3, 5, 7, 9, and 13-18. It is therefore respectfully submitted that no new matter has been added by Claims 21-23.

Consequently, in view of the foregoing discussion and present amendment, it is respectfully submitted that this application is in condition for allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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Please amend Claims 1, 5, 7, 10, and 12 as shown below:

1. (Thrice Amended) A semiconductor device comprising:

a substrate;

a protruding portion which is formed on the top face of the substrate [and the top of which serves as a dummy element for controlling a chemical mechanical polishing process];

and

a conductive layer wiring which is formed on the substrate so as to have a spiral shape and which serves as an induction element,

wherein said protruding portion is formed [so as to avoid being positioned] only in a region other than a region directly below said conductive layer wiring.

5. (Twice Amended) A semiconductor device comprising:

a substrate which has an inductor region;

a protruding portion which is formed on the top face of the substrate [and the top of which serves as a dummy element for controlling a chemical mechanical polishing process];

a conductive layer wiring which is formed in said inductor region on the substrate so as to have a spiral shape and which serves as an induction element; and

a protective film which is formed in said inductor region between the substrate and said conductive layer and prevents silicidation of said protruding portion in said inductor region.

7. (Twice Amended) A semiconductor device as set forth in claim 6, which further comprises an extracting wiring which is connected to said conductive layer wiring.

10. (Thrice Amended) A semiconductor device as set forth in claim 5, wherein said protruding portion is formed [so as to avoid being positioned] exclusively in a region other than a region directly below said conductive layer wiring.

12. (Twice Amended) A semiconductor device as set forth in claim 11, which further comprises an extracting wiring which is connected to said conductive layer wiring.

Claims 21-23 (New).